Serial No. 09/961,147

## REMARKS

STATUS OF THE CLAIMS

Claims 1-26 are pending in the application.

Claims 1-4, 6-8, 10, 11, 13-18, 20-22, 24, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson et al. (U.S. 6,486,895) and Ishida (U.S. 5,684,969).

Claims 5, 9, 12, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson et al. (U.S. 6,486,895), Ishida (U.S. 5,684,969), and Gounares et al. (U.S. 6,681,370).

According to the foregoing the claims are amended, and, thus, claims 1-26 remain pending for reconsideration, which is respectfully requested.

No new matter has been added in this amendment.

REJECTIONS

The office action page 2 rejects claims 1-4, 6-8, 10, 11, 13-18, 20-22 and 24-26 under 35 USC 103(a) as being unpatentable over Robertson (US Patent No. 6,486,895) in view of Ishida (US Patent No. 6,486,895). Ishida is newly cited, and thus newly relied upon.

The office action page 7 rejects claims 5, 9, 12, 19 and 23 under 35 USC 103(a) as being unpatentable over Robertson (US Patent No. 6,486,895) in view of Ishida and further in view of Gounares (U.S. Patent No. 6,681,370).

The independent claims are 1, 15, 25 and 26, which are rejected over Robertson and Ishida and according to the foregoing are amended to further emphasize the patentably distinguishing features of the claimed present invention. For example, the present Application FIGS. 1-5, 13; page 3, lines 7-28; page 7, line 26 to page 10, line 30; page 17, line 9 to page 18, line 19; FIGS. 15A-15H and description thereof on page 30, line 27 to page 34, line 1, support the claim amendments.

Robertson discusses a book metaphor, in which each page has a form of flat surface.

Ishida is newly relied upon for its discussion of zooming in and out of information nodes. Further, Ishida discusses "a user enters a scale factor and ... picks up virtual plane data fit to the scale factor from the virtual plane data (various diminishing data) generated and stored as

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previously." See Abstract, column 4, lines 27-37.  Ishida also discusses generating display data on the basis of "the logical structure data in the node" (column 4, lines 52-65).  Further, Ishida discusses an edit function suitable for the display (column 4, line 66 to column 5, line 5).

The differences of the present invention over Robertson and Ishida (USP 5,684,969 corresponding to JP H05-080967-A 20 and JP 3586472-8) is as follows:

(a)    In the claimed present invention, the manner of displaying the object is determined according to a *geometric relation between the visual field and the linked content items of the information object* (e.g., "*to generate the respective pieces of intermediate data for displaying* a particular *linked content item of the information object,* ~~when determined~~ *according to a geometric relation between said visual field* and ~~said~~ ~~information object to generate said respective pieces of intermediate data of~~ *said particular linked content item of the information object*" - claim 1).  In Ishida, however, the manner of displaying the object is determined according to a scale factor.

According to a benefit of the present invention, the items of object can be viewed appropriately at different positions and distances and in different directions for *virtual three dimensional arrangement of linked content items of the object* as well as *two dimensional arrangement of documents*.  According to Ishida, however, it only provides two-dimensional front view of the documents.

(b)    The claimed present invention displays *linked items* of the objects.  Ishida, however, does not use linkage information.

According to a benefit of the present invention, desired ones of *linked content items of the object can be easily searched*, by changing the visual field relative to the information object and thereby tracing successive links between content items of the information object (e.g., "*to generate the respective pieces of intermediate data for displaying* a particular *linked content item of the information object,* ~~when determined~~ *according to a geometric relation between said visual field* and ~~said information object to generate said respective pieces of intermediate data of~~ *said particular linked content item of the information object*" - claim 1).  According to Ishida, however, one or more documents can be only enlarged or reduced according to the input scale factor.

(c)    In the present invention, the information processing apparatus holds content type specific data processors (10) which are specific to respective content types of the linked content

items, and each content type specific data processor (10) holds a combination of an object display intermediate data generator (12) and an object image generator (14). In addition, in the present invention, the apparatus has flexibility of adding a new content type specific data processor (10) that corresponds to a new content type of linked content items, if necessary. E.g., "*holding ... a plurality of intermediate data generating means specific to said respective _linked_ content items of different content types* of the information object for generating respective pieces of intermediate data specific to a content type of a particular _linked_ content item of the information object ...*, and for holding, in an executable manner, a plurality of different display image generating means specific to said respective _linked_ content items of different content types of the information object* for generating respective display images from said respective generated pieces of intermediate data" claim 1).

According to a benefit of the present invention, linked content items of different content types with two and three dimensional shapes can be appropriately displayed according to a geometric relation between the visual field and the linked content items of the information object, and a new content type of linked content items of the information object can be accommodated for displaying by simply adding a new content type specific data processor (10) without changing an entire system.

(d)     The present invention may have the subject matter as recited in dependent claim 13.

According to a benefit of the present invention in claim 13, an unlimited number of linked content items can be traced by tracing the links between the content items. The information of the visual field is defined relative to "*a representative ~~object~~linked content item of the information object*," thus, a benefit of without using an absolute coordinate system, and hence it prevents loss of most significant bits or underflow of the dimensions of a linked content item due to a significant change of a scale factor.

### ISHIDA

Ishida is silent on the claimed present invention's, "*to generate the respective pieces of intermediate data for displaying a particular _linked_ content item of the information object, ~~when determined~~ according to a geometric relation between said visual field and ~~said information object to generate said respective pieces of intermediate data of~~ said particular _linked_ content item of the information object.*" In other words, in Ishida, a user inputs a scale factor according to which data of a node is displayed and the display data of the

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node can be on the basis of the logical structure of the node, which differs from the claimed present invention's, "*to generate ... intermediate data for displaying ... a <u>linked</u> content item of the information object, according to a geometric relation between said visual field* and said information object to generate said respective pieces of intermediate data of *said particular <u>linked</u> content item of the information object,*" because inputting a scale factor differs from taking into consideration "*a geometric relation between said visual field* and said information object to generate said respective pieces of intermediate data of *said particular <u>linked</u> content item of the information object*" as illustrated in FIGS. 15A-15H and pages 31-32 of the present Application.

In contrast to Ishida, either alone or as combined with Robertson, the claimed present invention provides "*holding ... a plurality of intermediate data generating means specific to said respective <u>linked</u> content items of different content types* of the information object for generating respective pieces of intermediate data specific to a content type of a particular <u>linked</u> content item of the information object ..., and for *holding, in an executable manner, a plurality of different display image generating means specific to said respective <u>linked</u> content items of different content types of the information object* for generating respective display images from said respective generated pieces of intermediate data; ... *causing said plurality of intermediate data generating means to generate ...* intermediate data for displaying a *particular <u>linked</u> content item of the information object,* when determined *according to a geometric relation between said visual field* and said information object to generate said respective pieces of intermediate data of *said particular <u>linked</u> content item of the information object,* ... and ... *causing said plurality of different display image generating means to generate display images of said particular <u>linked</u> content item of the information object from said respective generated pieces of intermediate data, ... according to the geometric relation between said visual field and* said particular information object to display *said particular <u>linked</u> content item of the information object,*" which has a benefit to generate the intermediate data in real time and to provide changing or zooming a whole view of the linked content items by changing the visual field.

Generating the intermediate data in real time of the present invention is more elaborated for clarifying a patentable distinction over Ishida, as follows: In Ishida, in the flow diagram of FIG.6 or FIG.10, it searches nodes not yet processed, and a group of pieces of diminished data are produced based on the content data for each node. At Step S6a, Ishida does not mention

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which node has a priority for producing diminished data. Thus, in Ishida, diminished data for less important ones of a large number of nodes may be produced earlier than more important ones, which is inefficient for viewing the claimed present invention's *linked content items of an information object.* On the other hand, the claimed present invention's *"to generate the respective pieces of intermediate data for displaying a particular linked content item of the information object,* ~~when determined~~ *according to a geometric relation between said visual field and said* ~~information object to generate said respective pieces of intermediate~~ ~~data of said~~ *particular linked content item of the information object,"* has a benefit that intermediate data of most and more important ones of the linked content items can be produced earlier, and the most or more important linked content items can be viewed earlier, which is very efficient for viewing the linked content items of the information object.

Further, Ishida's "rules for preparing diminishing display data according to the contents data of each node, ... rules for the display based on a logical structure" (column 7, lines 23-46), differ from the claimed present invention's, *"to generate ...* intermediate data for displaying ... *linked content item of the information object,* ~~when determined~~ *according to a geometric relation between said visual field and* ~~said information object to generate said respective~~ ~~pieces of intermediate data of~~ *said particular linked content item of the information object,"* because although Ishida's column 9, lines 25-47 discusses displaying according to a logical structure of the data in each node, but fails to disclose or suggest taking into consideration the claimed present invention's *"geometric relation between said visual field* ~~and said information object to generate said respective pieces of intermediate data of~~ *said particular linked content item of the information object."*

In particular, according to the present invention *"a geometric relation between said visual field* ~~and said information object to generate said respective pieces of intermediate~~ ~~data of~~ *said particular linked content item of the information object,"* is determined based upon "the direction given through input data received from the input device 101 or a program" (page 17, lines 9-16 of the present Application). The claimed present invention is directed to *"an information object represents one or more respective linked content items of different content types,"* so the claimed present invention's *"a geometric relation between said visual field and* ~~said information object to generate said respective pieces of intermediate data~~ *of said particular linked content item of the information object"* can relate to a *linked content item* of an information object and the intermediate data of a particular linked content

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item of the information object can be generated based upon "*a geometric relation between said visual field and said information object to generate said respective pieces of intermediate data of said particular linked content item of the information object*." In other words, in Ishida when the user inputs a scale factor, the scaling is applied to the text and the table in FIGS. 7a-7g and FIGS. 9a-9g based upon predetermined display rules and not based upon the claimed present invention's "*a geometric relation between said visual field and said information object to generate said respective pieces of intermediate data of said particular linked content item of the information object.*"

Ishida is silent on the claimed present invention's, "*a geometric relation between said visual field and said information object to generate said respective pieces of intermediate data of said particular linked content item of the information object*" 39 in FIG. 3 of the present Application.

Dependent claims recite patentably distinguishing features of their own or are at least patentably distinguishing due to their dependencies form the independent claims.

In view of the claim amendments and remarks, withdrawal of the rejection of pending claims and allowance of pending claims is respectfully requested.
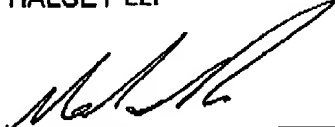
## CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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